Amendments To The Claims

1.(currently amended)   A method for determining a print image quality capability indicator of an ink-jet hard copy apparatus based on current actual operational conditions of the apparatus, comprising the steps of:

storing a plurality of predetermined ink-jet printing operation attributes related to output print image quality;

monitoring during printing a plurality of ink-jet printing operating characteristics corresponding to said operating attributes in-real-time, wherein-said-operating characteristics-are-correlated-to-said-attributes;

correlatively comparing said operating characteristics to said attributes; and

based-on-said-step-of-correlatively-comparing,-deriving-a-comparison-function-for each-of-the-operating-characteristics;-and

based on comparing said operating characteristics to said attributes, assigning a valuation-parameter-based-on-the-comparison-function-for-each-of-the-operating characteristics-such-that-said-valuation-parameter-is-the print image quality capability indicator for each of the operating characteristics representative of current actual operational conditions.

2.(currently amended) The method as set forth in claim 1, the step of storing a plurality of predetermined ink-jet printing attributes related to output print image quality further comprising:

determining a set of operational attributes related to print image quality produced by the ink-jet hard copy apparatus,

assigning a series of scaled values to each of said operational attributes such that each of the scaled values is representative of a predetermined level of performance of each of the respective operational attributes, and

storing a look-up table wherein a correlated scaled value is selected based on the current actual operating conditions.

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3. (currently amended) The method as set forth in claim 2, the step of ~~correlatively~~ comparing said operating characteristics to said attributes further comprising:

selecting for a current operational attribute of the ink-jet hard copy apparatus the scaled value representative of a predetermined level of performance indicative of a current operational condition.

4. (currently amended) The method as set forth in claim 3, ~~the-step-of-deriving-a comparison-function-for-each-of-the-operating-characteristics~~ further comprising~~:~~ normalizing each selected scaled value to a common standard.

5. (currently amended) The method as set forth in claim 4, the step of assigning ~~a-valuation-parameter-based-on-the-comparison-function-for-each-of-the-operating characteristics-such-that-said-valuation-parameter-is-the~~ print image quality capability indicator <u>for each of the operating characteristics</u> representative of current actual operational conditions further comprising:

deriving from a summation of each selected scaled value of all the printing attributes the value representative of print <u>image</u> quality availability based on the current actual operational conditions of the hard copy apparatus.

6. (currently amended) A computerized method for selecting a print mode for an ink-jet hard copy apparatus, comprising the steps of:

storing a set of data indicative of ink-jet printing ~~Operational-Attributes~~ <u>operational attributes</u> related to output print <u>image</u> quality;

monitoring <u>during printing</u> print <u>image</u> quality related ink-jet printing characteristics ~~during-printing-operations~~;

comparing each of said characteristics to selected ~~Operational-Attributes~~ <u>operational attributes</u> and deriving a comparison value for each of said characteristics indicative of current operational functionality of the apparatus;

calculating a <u>function</u> value ~~function~~ representative of expected print <u>image</u>

quality during a next subsequent printing operation as a function of all derived comparison values for each of said characteristics;

comparing said _function_ value ~~function~~ to a correlated preselected print _image_ quality value indicative of a predetermined print quality output; and

selecting the print mode for the next subsequent printing operation based on said comparing said _function_ value ~~function~~ to said correlated preselected print _image_ quality value indicative of a predetermined print _image_ quality output.

7. (currently amended) The method as set forth in claim 6, the step of storing a set of data indicative of ink-jet printing ~~Operational Attributes~~ operational attributes further comprising:

selecting ink-jet printing operational attributes significantly affecting print _image_ quality by the hard copy apparatus, and

assigning a set of weighted values to each of said operational attributes such that one of said weighted values can be selected as an indication of a current operational condition of the hard copy apparatus as determined by said step of monitoring print _image_ quality related ink-jet printing characteristics during printing operations.

8. (currently amended) The method as set forth in claim 7, the step of selecting the print mode for the next subsequent printing operation based on said comparing said _function_ value ~~function~~ to said correlated preselected print _image_ quality value indicative of a predetermined print _image_ quality output further comprising:

if said preselected print _image_ quality value assigns a print mode having a faster throughput than a print mode based on said _function_ value ~~function~~, and

if said hard copy apparatus is capable of print with a print _image_ quality at least equal to the print _image_ quality related to said preselected print _image_ quality value, printing in the print mode related to said preselected print _image_ quality value, or

if said print mode related to said preselected print _image_ quality value can not achieve the print _image_ quality preselected as determined by said step of comparing

said <u>function</u> value ~~function~~ to a correlated preselected print <u>image</u> quality value indicative of a predetermined print <u>image</u> quality output, over-riding selection of the print mode related to said preselected print <u>image</u> quality value and printing in the print mode based on said <u>function</u> value ~~function~~.

9. (currently amended) A method for selecting a print mode for an ink-jet hard copy apparatus having a plurality of user selected print modes for rendering a plurality of print <u>image</u> quality levels, comprising the steps of:

A) storing a set of ink-jet printing ~~Operational Attributes~~ <u>operational attributes</u>;

B) monitoring <u>during printing</u> print <u>image</u> quality related ink-jet printing characteristics ~~during printing operations~~;

C) comparing said characteristics to said ~~Operational Attributes~~ <u>operational attributes</u> for deriving a comparison value representative of expected print <u>image</u> quality during a next subsequent printing operation;

D) assigning a currently available print mode to said ~~predetermined~~ <u>comparison</u> value;

E) comparing said currently available print mode to a user currently selected print mode; and

F) over-riding said currently selected print mode by selecting said currently available print mode when said currently selected print mode is insufficient to render an expected print <u>image</u> quality level from the currently selected print mode of the plurality of user selected print modes.

10. (currently amended) The method as set forth in claim 9, comprising the steps of:

G) starting a printing job in a currently used print mode <u>comprising</u> wherein ~~the currently used print mode is either~~ the currently selected print mode or the currently available print mode as determined in steps E) and F);

H) periodically halting said printing job; and

I) repeating steps B) through H) until said printing job is finished.

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11. (currently amended) The method as set forth in claim 9, the step of storing a set of ink-jet printing ~~Operational Attributes~~ operational attributes further comprising:

storing a data set for a plurality, "n," of ~~Operational Attributes~~ operational attributes wherein a performance score is provided in a predetermined relationship to a series of performance levels of operation for each of the attributes such that the score is indicative of the related attribute positive or negative affect on print image quality.

12. (currently amended) The method as set forth in claim 11, the step of comparing said characteristics to said ~~Operational Attributes~~ operational attributes for deriving a comparison value representative of expected print image quality during a next subsequent printing operation further comprising:

from said data set, each said comparison value is determined as a function of a weighted score, "WS," for each of the plurality of ~~Operational Attributes~~ operational attributes, and where

$$WS = PS_{MAX} - (SW\% \ (PS_{MAX} - PS)),$$

where PS is an ~~Operational Attributes~~ operational attributes performance score and SW% is predetermined subjective weighting factor.

13. (original) The method as set forth in claim 12, further comprising the step of:

determining a total weighted score, "TWS," indicative of said currently available print mode in accordance with the equation:

$$TWS = \ WS_{1-n} \div n.$$

14. (currently amended) A system for dynamic print mode selection in an ink-jet hard copy apparatus having a plurality of end-user selectable print image quality levels, comprising:

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sensor means for ~~real-time~~ monitoring <u>during printing</u> ~~of~~ print quality related ink-jet printing characteristics;

coupled to said sensor means, memory means for storing data output from said sensor means and for containing predetermined print mode operational instructions related to print quality; and

processing means for encoding the data output from said sensor means as a value representative of current operational print <u>image</u> quality availability and for comparing current operational print <u>image</u> quality availability to desired print <u>image</u> quality based on a currently selected one of the end-user selectable print <u>image</u> quality levels and for overriding the current end-user selectable print <u>image</u> quality level for the next printing operation and substituting a print mode representative of achieving the current end-user selectable print <u>image</u> quality level from said predetermined print quality related ink-jet printing characteristics print <u>image</u> quality related ink-jet printing characteristics mode operational instructions when said current operational print <u>image</u> quality availability is not adequate to meet the print <u>image</u> quality level of the current end-user selectable print <u>image</u> quality level.

15.(currently amended) The system as set forth in claim 14, the processing means further comprising:

means for halting a printing operation periodically to re-evaluate said current operational print <u>image</u> quality availability and for re-comparing current operational print <u>image</u> quality availability to desired print <u>image</u> quality based on a currently selected one of the end-user selectable print <u>image</u> quality levels and for restarting the printing operation in a print mode suited to any changes in current operational print <u>image</u> quality availability based on current said print <u>image</u> quality related ink-jet printing characteristics.